

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>200411F-0425</b>	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. <b>PCT/JP2004/017106</b>	International filing date (day/month/year) <b>17.11.2004</b>	Priority date (day/month/year) <b>17.11.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>C01B39/46, B01J29/70, C07D201/04, 223/10</b>		
Applicant <b>NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY</b>		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.	
2.	This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.	
3.	This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>9</u> sheets, as follows: <div><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</div> b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s))  _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).	
4.	This report contains indications relating to the following items: <div><input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input checked="" type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input checked="" type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</div>	

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/017106

Box No. I

Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-7, 10, 13-53 as originally filed/furnished
- pages\* 8, 9, 11, 11/1, 12 received by this Authority on 20.09.2005
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. 1-5, 7, 8, 12-14, 16-20, 22-43 as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 6, 9-11, 15, 21 received by this Authority on 20.09.2005
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- sheets fig. 1-18 as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/017106

## Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees the applicant has:
- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☒ neither restricted the claims nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
- ☐ complied with.
- ☒ not complied with for the following reasons:

Claims 1 to 8, 10, 11, 15 to 21, 24, 25, 27 to 33 and 39 pertain to crystalline layered compounds that have the specific base structure and the specific x-ray powder diffraction pattern that are set forth in claim 1; to zeolites that are produced from said crystalline layered compounds; or to a method for the production of  $\epsilon$ -caprolactams which employs said zeolites. Meanwhile, claims 9, 12 to 14, 22, 23, 26, 34 to 38 and 40 to 43 pertain to zeolites that have the chemical composition and the abstract geometric crystal structure that are set forth in claim 9 and claim 23, or to a method for the production of  $\epsilon$ -caprolactams which employs said zeolites.

Such being the case, the inventions in question cannot be considered to be a single invention or a group of inventions that are so linked as to form a single general inventive concept.

[Refer to the Supplemental Box]

4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-8, 10, 11, 15-21, 24, 25, 27-33, 39



INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/JP2004/017106

Box No. VI	Certain documents cited																						
1. Certain published documents (Rule 70.10)																							
<table><tr><td>Application No. Patent No.</td><td>Publication date (day/month/year)</td><td>Filing date (day/month/year)</td><td>Priority date (valid claim) (day/month/year)</td></tr><tr><td>JP 2004-175661 A</td><td>24.06.2004</td><td>14.11.2003</td><td>14.11.2002</td></tr><tr><td>[EX]</td><td></td><td></td><td></td></tr><tr><td>JP 2004-33944 A</td><td>02.12.2004</td><td>18.11.2003</td><td>25.04.2003</td></tr><tr><td>[EX]</td><td></td><td></td><td></td></tr></table>				Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)	JP 2004-175661 A	24.06.2004	14.11.2003	14.11.2002	[EX]				JP 2004-33944 A	02.12.2004	18.11.2003	25.04.2003	[EX]			
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JP 2004-175661 A	24.06.2004	14.11.2003	14.11.2002																				
[EX]																							
JP 2004-33944 A	02.12.2004	18.11.2003	25.04.2003																				
[EX]																							
2. Non-written disclosures (Rule 70.9)																							
<table><tr><td>Kind of non-written disclosure</td><td>Date of non-written disclosure (day/month/year)</td><td>Date of written disclosure referring to non-written disclosure (day/month/year)</td></tr><tr><td></td><td></td><td></td></tr></table>				Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)																	
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/017106

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The inclusion of the term "and" in the disclosure of claim 24 suggests that the zeolites set forth therein have four types of crystal structure. However, it is impossible for a single zeolite to simultaneously have four types of crystal structure, and thus the content of the disclosure in question is unclear. Such being the case, claim 24 cannot be said to be set forth in a sufficiently clear manner.

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Box IV.3

(That is to say, the disclosures pertaining to the latter inventions do not mention the technical characteristics that should result from using the specific crystalline layered compounds that are set forth in claim 1 (i.e., specific microstructures such as the X-ray powder diffraction pattern), and thus claims 1 to 43 cannot be said to share a common technical feature.)